Reviewer’s report

Title: Are family physicians comprehensively using electronic medical records?: A Canadian Perspective

Version: 4 Date: 11 January 2015

Reviewer: Valentina Lichtner

Reviewer’s report:

Thank you for the opportunity to review the revised version of this paper. I have read the paper both in view of the original version and the improvements made, as well as in its new form, as a new paper, independently from the suggestions made through the review process.

In view of the original, I believe this to be much improved. The introduction is more clearly focused on Canada, the method is clearer and some additional analysis has been done, with the addition of benchmarks.

However, the paper as it stands still appears to need further work. I highlight below areas that could be improved, though the authors may decide to improve it in other ways. It is essential (Compulsory Revision) that the purpose is strengthened and consequent relevant literature, method and findings given greater depth.

1. The introduction is quite short, covering four areas of study: Canada and Ontario; the role of EMR in quality of care, and the need for data quality; relationship between implementation programs and extent of use (adoption); methodological aspects of data quality for secondary purposes/research. Each of these (or a selection) needs to be looked at in more depth and detail. For example, there is no mention (?) of Canada Health Infoway (an international reader may not know of the program - this is essential knowledge).

It seems that the main contribution of this paper is methodological, re: data analysis for secondary purposes. Then much more needs to be said on this in the introduction.

Essentially the introduction needs to provide the rationale for why this study is important, directly supporting the research questions.

2. Method: one (or more) clear, explicit research questions – the purpose for the data analysis – still missing or unclear. In their cover letter, the authors explain that “We are trying to determine the duration of time required to have a patient chart reasonably complete and useable for secondary purposes” - was this the aim of the study?

Or was the aim to know how many doctors in Ontario are using EMR?

All throughout the paper seems to suffer from a vagueness of purpose. (It made me wonder whether this is something that characterises ‘big data’ analysis – we
can do lots of analysis on the data, but we don’t really know what for; the analysis tries to discover a purpose out of the number crunching?).

My understanding is that the main contribution of this paper wants to be methodological. If so, the method is of course important for policy makers who may have a need for it (and points about this are/can be made in introduction and conclusion), but the contribution needs first of all to demonstrate how it fills a gap in the method literature (expanded in the introduction). For example, I imagine there is a literature on Measures of Utilisation and on Measuring Time – how do the methods described in this paper compare to those described in the literature/used by others?

Setting benchmarks: This seems now a core aspect of the analysis. Could even become the ‘purpose’ of the paper (and find space in the title). More needs to be said of how these benchmarks were set – the methods. Do they demonstrate validity and how.

3. Results: a very short section that needs expanding.

Much more could and should be said about the findings re: the benchmarks. The figures 4-5 need to be commented on and explained. What are they telling us about: 1. Use of EMR (and perhaps clinical utility of EMR); 2. Validity of the benchmarks themselves (what if all doctors are way off the benchmark?)

4. The discussion/conclusion would need to be revised in view of the clarification of the research questions and the more in-depth analysis of the findings.

Other aspects/typos to look at:

Lines 95-100: these two sentences are unclear to me, how they fit in the logic of the argument
Line 106: programs… are sufficient … (check the verb)
Line 108-111: …."Evaluating the data quality of EMR …. Therefore we evaluated data population … as a proxy": as it is written this is unconvincing; if data quality is important, evaluate data quality, not a proxy. Furthermore: needs to explain ‘data quality’; the literature says completeness is one of the measures of data quality, but then it is not a proxy for it?

Line 222: less medications, less tests: fewer medications, fewer tests?

Line 283-4: ‘our study illustrates that both analysis of physician and patient time …’ : unclear what is the subject of this sentence – the analysis or the times variables?

Incidentally, some of the systems used by the GPs in the UK automatically provide to commissioners/managers details of doctors who are outliers and performance in relation to prescriptions, for example – without a need of separate data elaboration. This information is provided in ‘dashboards’. Is this something also provided by the system in Canada? We know nothing about the EMR from the paper.
**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests